nvironmental Research

An International Journal of Environmental Medicine
and the Environmental Sciences

EDITOR-IN-CHIEF

Irving J. Selikoff

ASSOCIATE EDITORS

E. Cuyler Hammond
B. Holmberg
Renate D. Kimbrough
Paul Kotin
Cesare Maltoni
John A. Moore
R. A. Neal
Jaroslav Teisinger
Kenzaboro Tsuchiya
Ian Webster

Volume 37, 1985

ACADEMIC PRESS, INC.
(Harcourt Brace Jovanovich, Publishers)
San Diego Orlando New York London
Toronto Montreal Sydney Tokyo

Copyright © 1985 by Academic Press, Inc.

All rights reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1985 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0013-9351/85 $3.00

MADE IN THE UNITED STATES OF AMERICA

CONTENTS OF VOLUME 37

NUMBER 1, JUNE 1985

V. LARRY KENNEY. A Review of Comparative Responses of Men and Women to Heat Stress 1

USAN G. SHAMI, RONALD K. WOLFF, FLETCHER F. HAHN, ANTONE L. BROOKS, AND WILLIAM C. GRIFFITH. Early Cytokinetic and Morphological Response of Rat Lungs to Inhaled Benzo(*a*)pyrene, Gallium Oxide, and SO_2 12

. MARCHAL-SÉGAULT, J. SEUGÉ, AND G. LAUGÉ. Studies on the Toxicity of Some Carbamate Fungicides in *Drosophila melanogaster* Meig. (Insecta, Diptera) 26

AKAO WATANABE, AKIO KOIZUMI, HIROYOSHI FUJITA, MIHO KUMAI, AND MASAYUKI IKEDA. Dietary Cadmium Intakes of Farmers in Non-polluted Areas in Japan, and the Relation with Blood Cadmium Levels 33

ICHOLAS HAHON, JAMES A. BOOTH, FRANCIS GREEN, AND TRENT R. LEWIS. Influenza Virus Infection in Mice after Exposure to Coal Dust and Diesel Engine Emissions 44

UDITH A. GRAHAM, FREDERICK J. MILLER, DAVID W. DAVIES, MICHAEL E. HITESHEW, AND LEON C. WALSH III. Inhalation Studies of Mt. St. Helens Volcanic Ash in Animals. I. Introduction and Exposure System 61

AMES A. RAUB, GARY E. HATCH, ROBERT R. MERCER, MARGARET GRADY, AND PING-CHUAN HU. Inhalation Studies of Mt. St. Helens Volcanic Ash in Animals. II. Lung Function, Biochemistry, and Histology 72

LAINE C. GROSE, MARGARET A. GRADY, JOSEPH W. ILLING, MARY J. DANIELS, MARYJANE K. SELGRADE, AND GARY E. HATCH. Inhalation Studies of Mt. St. Helens Volcanic Ash in Animals. III. Host Defense Mechanisms 84

. W. NORSTED, C. A. KOZINETZ, AND J. F. ANNEGERS. Formaldehyde Complaint Investigations in Mobile Homes by the Texas Department of Health 93

. L. CASTERLINE, JR., N. M. BARNETT, AND YUOH KU. Uptake, Translocation, and Transformation of Pentachlorophenol in Soybean and Spinach Plants 101

ELVIN DWAINE REUBER. Carcinogenicity and Toxicity of Malathion and Malaoxon 119

J. E. Huff, R. Bates, S. L. Eustis, J. K. Haseman, and E. E. McConnell. Malathion and Malaoxon: Histopathology Reexamination of the National Cancer Institute's Carcinogenesis Studies . . . 154

Dalia M. Spektor, George D. Leikauf, Roy E. Albert, and Morton Lippmann. Effects of Submicrometer Sulfuric Acid Aerosols on Mucociliary Transport and Respiratory Mechanics in Asymptomatic Asthmatics 174

Saroj Chakrabarti and Jules Brodeur. Influence of Zinc Chloride on the Metabolism and Hepatotoxicity of Bromobenzene in Rats 192

Debra K. D. DeLor and Gerald Sonnenfeld. Studies on Activation of Benzo[*a*]pyrene for Inhibition of Interferon Induction 205

Johnny L. Carson, Albert M. Collier, Nancy G. Henshaw, Craig A. Smith, and Shih-chin Hu. Response of Human Ciliated Respiratory Epithelium to Brief *in Vivo* Ozone Exposure: An Ultrastructural Study 212

Nicholas Hahon. Inhibition of Viral Interferon Induction in Mammalian Cell Cultures by Azo Dyes and Derivatives Activated with Rat Liver S9 Fraction 228

K. Diane Courtney, James E. Andrews, and Margaret A. Grady. Placental Transfer and Fetal Deposition of Hexachlorobenzene in the Hamster and Guinea Pig 239

In Memoriam
Hans L. Falk (1919–1985) 250

Announcement 252

Number 2, August 1985

Review Article

H. Babich, M. A. Devanas, and G. Stotzky. The Mediation of Mutagenicity and Clastogenicity of Heavy Metals by Physicochemical Factors. 253

Regular Articles

Manfred K. Eberhardt, Angel A. Román-Franco, and Margarita R. Quiles. Asbestos-Induced Decomposition of Hydrogen Peroxide. 287

Silvia Gabor, Maria Ciugudeanu, and Didi Surcel. Effects of Selenium on Quartz-Induced Cytotoxicity in Macrophages. 293

V. De Santis and I. Longo. Health Effects of Airborne Effluents Released from the Nuclear Cycle. 300

Bengt Källén and Gunnar Thorbert. A Study of Pregnancy Outcome in a Small Area around a Chemical Factory and a Chemical Dump. 313

A. Saari Csallany, John D. Manwaring, and B. Zaspel Menken. Ozone-Related Fluorescent Compounds in Mouse Liver and Lung. 320

Saroj Chakrabarti and Jules Brodeur. Influence of Selenium on the Metabolism of Bromobenzene and a Possible Relationship to Its Hepatotoxicity. 327

Rong-Chi Chen, Shu-Ying Tang, Hideaki Miyata, Takashi Kashimoto, Yang-Chyuan Chang, King-Jen Chang, and Ta-Cheng Tung. Polychlorinated Biphenyl Poisoning: Correlation of Sensory and Motor Nerve Conduction, Neurologic Symptoms, and Blood Levels of Polychlorinated Biphenyls, Quaterphenyls, and Dibenzofurans. 340

Omkar and G. S. Shukla. Nature of Dichlorvos Intoxication in a Freshwater Prawn, *Macrobrachium lamarrei* (H. Milne Edwards). 349

Hugo Chiodi and John G. Mohler. Effects of Exposure of Blood Hemoglobin to Nitric Oxide. 355

Andrew Churg and Barry Wiggs. Mineral Particles, Mineral Fibers, and Lung Cancer. 364

Donna Vredevoe, Louis Levy, David Knutson, Glenn Cook, and Peggy Cohen. Recovery of the Murine Mononuclear Phagocytic System following Chronic Exposure to Cadmium. 373

John J. Zone and William N. Rom. Circulating Immune Complexes in Asbestos Workers. 383

B. K. Behera and B. N. Misra. The Effect of Sugar Mill Effluent on Enzyme Activities of Rice Seedlings. 390

T. Ong, W.-Z. Whong, J. Xu, B. Burchell, F. H. Y. Green, and T. Lewis. Genotoxicity Studies of Rodents Exposed to Coal Dust and Diesel Emission Particulates. 399

W. T. Parry. Calculated Solubility of Chrysotile Asbestos in Physiological Systems. 410

Jadwiga Chmielnicka, Ewa M. Bem, Elżbieta A. Brzeźnicka, and Małgorzata Kasperek. The Tissue Disposition of Zinc and Copper following Repeated Administration of Cadmium and Selenium to Rats. 419

Vergil H. Ferm and David P. Hanlon. Constant Rate Exposure of Pregnant Hamsters to Arsenate during Early Gestation. . . 425

Richard T. Di Giulio and Patrick F. Scanlon. Effects of Cadmium Ingestion and Food Restriction on Energy Metabolism and Tissue Metal Concentrations in Mallard Ducks (*Anas platyrhynchos*). 433

WILLIAM S. LINN, D. ARMIN FISCHER, DEBORAH A. SHAMOO, CHARLES E. SPIER, LUPE M. VALENCIA, UTE T. ANZAR, AND JACK D. HACKNEY. Controlled Exposures of Volunteers with Chronic Obstructive Pulmonary Disease to Sulfur Dioxide. 445

PATRICIA C. BRENNAN AND FREDERICK R. KIRCHNER. Quantitative Assessment of Rabbit Alveolar Macrophage Function by Chemiluminescence. 452

GEORGE P. DASTON, BLAIR F. REHNBERG, BRENDA CARVER, AND ROBERT J. KAVLOCK. Toxicity of Sodium Fluoride to the Postnatally Developing Rat Kidney. 461

ERNST L. WYNDER, GRETCHEN S. DIECK, NANCY E. L. HALL, AND HELI LAHTI. A Case–Control Study of Diesel Exhaust Exposure and Bladder Cancer. 475

ALESSANDRO CAVALLERI, CLAUDIO MINOIA, PLINIO RICHELMI, CARLA BALDI, AND GUISEPPINA MICOLI. Determination of Total and Hexavalent Chromium in Bile after Intravenous Administration of Potassium Dichromate in Rats. 490

ERRATA

Volume 37, Number 1, June 1985: JUDITH A. GRAHAM, FREDERICK J. MILLER, DAVID W. DAVIES, MICHAEL E. HITESHEW, AND LEON C. WALSH III, "Inhalation Studies of Mt. St. Helens Volcanic Ash in Animals. I. Introduction and Exposure System," pp. 61–71. 497

Volume 37, Number 1, June 1985: JAMES A. RAUB, GARY E. HATCH, ROBERT R. MERCER, MARGARET GRADY, AND PING-CHUAN HU, "Inhalation Studies of Mt. St. Helens Volcanic Ash in Animals. II. Lung Function, Biochemistry, and Histology," pp. 72–83. 497

Volume 37, Number 1, June 1985: ELAINE C. GROSE, MARGARET A. GRADY, JOSEPH W. ILLING, MARY J. DANIELS, MARYJANE K. SELGRADE, AND GARY E. HATCH, "Inhalation Studies of Mt. St. Helens Volcanic Ash in Animals. III. Host Defense Mechanisms," pp. 84–92. 497

ANNOUNCEMENT. 498

AUTHOR INDEX FOR VOLUME 37. 499

The Subject Index for Volume 37 will appear in the December 1985 issue as part of a cumulative index for the year 1985.